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## Effects of European hedgehog rehabilitation

by Madeleine Moazzami

The European hedgehog (*Erinaceus europaeus*) is probably our most frequent garden visitor. They are non-territorial nocturnal mammals which rest in high grass, bushes, underneath garden sheds, in compost heaps and under fallen trees or leaves during the day. They are about 20-25cm long and mainly eat beetles, caterpillars, earthworms, bird eggs and small mammals. Normal home range size is <40 ha. They hibernate between November and mid-March.



Hedgehogs are common casualties in British wildlife hospitals, which rehabilitate ill, injured, displaced or orphaned wildlife. Many animals have been injured by garden hazards: ponds (if they fall in they cannot get up and will drown), strimmers used in high grass or bushes (may kill or injure them severely), uncovered drains, litter (they get stuck in for example plastic binders for bottles), nets (they get trapped and starve to death in for example tennis and football nets), slugpellets (poisonous for hedgehogs). Other dangers for these small mammals are vehicles, dogs (especially for young hedgehogs) and pre-built bonfires (they build nest in them and if they are not moved once directly before they are lit the animals will be hurt or burned to death).

Due to the large number of hedgehogs admitted to sanctuaries every year it has become important to investigate their survival statistics when they are returned into the wild. A group of scientists at The University of Bristol have examined the effects of translocation (moving wild animals from one location to another) and temporary captivity of European hedgehogs. The post-release survival and behaviour of five groups of animals have been compared: (1) injured or sick hedgehogs which have spent one month in a wildlife hospital (rehab-translocated), (2) healthy hedgehogs which have spent 6 days in captivity (direct-translocated), (3) spent one month in captivity (captive-translocated), (4) healthy hedgehogs captured and re-released at capture site 50m from each of the release gardens (recipient wild) and (5) healthy hedgehogs captured and re-released at capture site 3km away from nearest release site (control wild).

Factors that may affect the survival rate are handling stress, finding food, navigate in new habitat, recognise danger, avoid predators and erratic movements.

Translocation of animals may also have an impact on the recipient population. It is therefore essential to find a suitable location for release, which will minimise the

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possibility of intra-specific competition. The aim of this research is to quantify the behaviour and survival and post-release of three treatments of translocated species and investigate the impact on the already existing hedgehog population.

In March 2004, twenty suburban gardens in England were selected as release sites for the hedgehogs. Factors taken into account were: badger activity (hedgehogs are their prey), risks posed by insecticides, activity and proximity of traffic, wild hedgehogs in the area, features such as ponds, garden netting etcetera, whether the households were willing to provide food and water and freedom of movement from the release site.

Each hedgehog has a radio-transmitter glued to one of its spines, which does not inhibit movement. Coloured heat shrink tubing was used to mark each individual, which all weighed >500g. The scientists track the hedgehogs by foot between 21.00 and 03.00.

It is assumed that the observer had no influence over the behaviour of the animals. When the mammals were captured they were checked for mites, ticks, injuries, trauma and then weighed. The groups were not released at the same time, but at the same site. However this should not influence their survival rate. Movement parameters were used to record range area at night, distance travelled, speed of travel and time spent active.

### **Summary of the result**

The direct-translocated group had the greatest loss of body weight. The direct-translocated group travelled the greatest mean distance even though there was only one surviving hedgehog left at the end of the experiment. Individuals in all groups returned to a previously used nesting site at least once. Even though the direct-translocated and captive-translocated groups had been moved from the same location and under equal circumstances, only the survival pattern for the captive-translocated group was comparable to the control-wild group.

This suggests that direct translocation has a negative impact of survival of hedgehogs and that a short time spent in captivity improves the survival statistics. In captivity the animals improve their fat reserves and they learn how to deal with stress. Treatment and handling of wild animals by humans may initially reduce the body mass of the hedgehogs, which may lead to mortality when released into the nature. However, longer time in captivity enables the animals to become accustomed to stress and gain weight. Nevertheless longer periods in captivity may lead to inability to recognise food and predators which in turn leads to lower survival rate.

No evidence was found that indicated any effect on the recipient wild hedgehog population.

### **Conclusion**

Whether injured or not, animals held in captivity achieves higher survival statistics than individuals translocated at a minimum time in captivity.

This research experiment proves that temporary treatment in wild life sanctuaries and translocation of wild hedgehogs for conservation of population and concerning purpose are being successful.

At this time it is crucial to continue studies in determining the threshold for reducing manipulation stress and for the animals to gain optimal mass. I also believe that it is of great importance to conduct similar experimental studies with other rehabilitated animals released from wild life hospitals to gain new essential knowledge.

## **References**

Susie E. Molony, Claire V. Dowding, Philip J. Baker, Innes C. Cuthill, Stephen Harris (2006). The effect of translocation and temporary captivity on wildlife rehabilitation success: An experimental study using European hedgehogs (*Erinaceus europaeus*). School of Biological Sciences, University of Bristol.

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